

Appl. No. : 09/403,800
Filed : February 22, 2000

REMARKS

The following remarks are from the combination of the Applicant's Response to Final Office Action filed on April 29, 2003, and the Applicant's Supplemental Response to Final Office Action filed by facsimile on June 26, 2003. Minor changes in the language of the remarks are indicated as ~~deletions~~ and additions (both boldfaced for easy reference). Also, please note that the amended claims being filed herewith includes the claim set filed in the Applicant's Supplemental Response to Final Office Action filed by facsimile on June 26, 2003, plus additional new dependent claims that depend on the pending independent claims 33, 60, and 61.

Remarks From the Response to Final Office Action Filed on April 29, 2003

In the Final Office Action mailed January 29, 2003, the Examiner has maintained the rejection of Claims 33-35, 38-55, and 58-62 under 35 U.S.C. 102(b) or under 35 U.S.C. 103(a) in view of the Hirshstein reference (U.S. Patent No. 2,284,737). The Examiner also maintained the rejection of Claims 40-55 and 58-59 under 35 U.S.C. 102(b) or under 35 U.S.C. 103(a) in view of the Pravicha et al. reference (U.S. Patent No. 745,519). By this amendment, the Applicant has amended some of the rejected claims, as shown herein, and submits the following argument. In particular, independent Claims 33, 40, 42, 52, and 53 have been amended to include limitations associated with an output flow retarding member and an active lag capacity of the separator which results from such flow retarding means. Some of the dependent claims have been amended in accordance with the amended independent claims.

Rejection under 35 U.S.C. § 102(b) or § 103(a) in view of Hirshstein

As seen in Figures 1, 5, 6, and 7 of the Hirshstein reference, the disclosed device has a complex multi-baffle assembly (41, 43, 44, 45, 47) that is equivalent to the first underflow baffle. The baffle 51 is equivalent ~~of~~ to the second underflow baffle in the conventional "API"-type separator structure (prior art). The "second" baffle (51) appears to have incorporated into it an overflow pipe for venting gas. Otherwise, the baffle (51) functions as an underflow baffle of the conventional API-type separator. The zone denoted as "Q" in Figure 1 of the Hirshstein reference is defined between the first and second baffles. The Applicant notes that the primary level or steady state liquid flow level in the Hirshstein device is, as in the API-type devices,

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along a generally horizontal line defined between the lower portions of the input and output tubes (16 and 17 in Figure 5).

The Examiner has noted that the liquid level in the "Q" zone does vary. The Applicant notes, however, that such a level varies only as a result of either the input flow ~~rate~~ (or lack thereof), or as a result of the ~~weight of the~~ fat (or equivalent separated material) pressing down on the liquid (illustrated in Figures 5-7). In the Hirshstein device, the level change is not caused by the action of the output portion of the device.

In contrast, the Applicant's device as claimed comprises an outflow control mechanism that controls the output rate of the device depending on the separator chamber's liquid level. In one possible embodiment, the output flow control comprises means for retarding outflow that is controlled by means sensitive to the high and low liquid levels of the separation chamber. Such a feature is not disclosed, taught, contemplated, or suggested in the Hirshstein reference. Thus, the Applicant respectfully submits that Claims 33-35, 38-55, and 59-61 (58 and 62 cancelled) are patentably distinguished from the Hirshstein reference.

Rejection under 35 U.S.C. § 102(b) or § 103(a) in view of Pravicha

In reference to Figure 1 of Pravicha reference, separation is performed in the tank labeled 8 in a manner analogous to the API-type separator. There is no substantive oscillation in the level of oil and water mixture in the tank. The oil and water mixture simply sits in the tank with oil on the surface being decanted as more oil and water mixture is poured in.

~~The~~ For the overflow-pipe denoted as "9" (referred to as a siphon by the Examiner) in Figure 1 of the Pravicha reference, to function in a manner similar to the Applicant's device so as to provide an "active lag capacity," would require a direct liquid connection between the tank 8 and the compartment (7 in Figure 1) from which the pipe 9 draws its water ~~from~~. Such direct connection between the two compartments is simply not present in the Pravicha device of Figure 1, ~~and which~~ therefore does not provide the active lag capacity as recited in the amended claims.

In reference to Figure 4 of the Pravicha reference, the left hand portion of the composite tank generally defines an API-type structure with no control over the outflow. Thus, there is no "active lag capacity" here as well. For active lag capacity to exist between the two underflow baffles shown in Figure 4, outflow control something other than mere decanting needs to be present. No such outflow control exists in the device of Figure 4.

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The Pravicha reference does not disclose, teach, contemplate, or suggest any concept that combines the features of a controlled output that facilitates an active lag capacity in a separation chamber. ~~Thus, the Applicant respectfully submits that Claims 40-55 and 58-59 in the amended form are patentably distinguished from the Pravicha reference.~~

Remarks From the Supplemental Response to Final Office Action Filed on June 26, 2003

First, the Applicant would like to thank the Examiner for extending an invitation to discuss the claimed device in view of the cited references – the Hirshstein reference (U.S. Patent No. 2,284,737) and the Pravicha et al. reference (U.S. Patent No. 745,519). In particular, the Examiner noted that the overflow-pipe (9) in Figure 1 of the Pravicha reference functions as a siphon. The Applicant now summarizes why the overflow-pipe (9) does not function as a siphon, and why there would be no motivation to have a siphon on the Pravicha apparatus.

Operation of the Pravicha separator

The Pravicha separator comprises a separating tank compartment (8) fed at water surface level with the oil-water mixture, connected to a compartment (7) to which ‘oil-free’ water flows through tube (6). There is no under flow connection between the separating tank compartment (8) and the compartment (7). From the compartment (7), ‘oil-free’ water is delivered to drain through an “overflow-pipe 9” (page 1, line 82 of the Pravicha reference).

The Pravicha separator is intended to run liquid full. That is, there is no capability for (or intention of) lowering of the operating water level to provide capacity to accumulate and increase substantially the holding (residence) time for inflowing oil-water mixtures. For example, in Figure 1 of the Pravicha reference, the separation compartment (8) remains full of water as deliberately designed and the only water exit is via tube (6), which is intended to overflow ‘oil-free’ water into compartment (7). Thus, the tube (6) overflow level determines the surface level of the liquid in compartment (8). Also in Figures 1, 1a and 3, the oil which accumulates on the surface in the separation compartment (8) overflows through the spout (10), the weir height of which is adjusted so that only oil overflows. This can be achieved by setting the adjustable gauge (12) so that it is a little higher than the outlet of tube (6). Thus, the surface level in the separation compartment (8) is intended to remain substantially steady at the chosen setting of the gauge (12).

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The Applicant notes that it is difficult for one to see any point in lowering the water level in chamber (7), as it is disconnected from and can have no influence on the level in the separation chamber (8). Thus, as the Examiner agreed, there is no motivation in the Pravicha separator to install a siphon on the chamber (7).

For the foregoing reasons, the Applicant respectfully submits that the Pravicha separator does not suggest or anticipate the concept of lowering the operating liquid level (by means of a siphon) to provide capacity to store incoming oil-water mixture without an outflow from the separator (which beneficially and substantially increases the time available for oil-water separation).

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SUMMARY

For the foregoing reasons, the Applicant submits that the amended claims of the pending application are allowable. Should there be any impediment to the prompt allowance of this application that could be resolved by a telephone conference, the Examiner is respectfully requested to call the undersigned at the number shown.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: _____

7-29-03

By: _____



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